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L1 STRUCTURE UPLOADED

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L1 HAS NO ANSWERS
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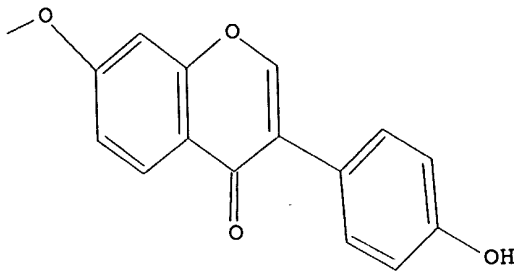

Structure attributes must be viewed using STN Express query preparation.

=> s l1 sss sam

SAMPLE SEARCH INITIATED 14:11:14 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED - 678 TO ITERATE

100.0% PROCESSED 678 ITERATIONS 9 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
BATCH **COMPLETE**
PROJECTED ITERATIONS: 11999 TO 15121
PROJECTED ANSWERS: 9 TO 360

L2 9 SEA SSS SAM L1

=> s l1 sss full

FULL SEARCH INITIATED 14:11:22 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED - 13798 TO ITERATE

100.0% PROCESSED 13798 ITERATIONS 157 ANSWERS
SEARCH TIME: 00.00.02

L3 157 SEA SSS FUL L1

=> s l3 and (ALDH(w)2 or alcohol? or anti-dipsotrop? or antidipsotrop?)

```
           271 L3
           886 ALDH
       6730705 2
            33 ALDH(W)2
        242251 ALCOHOL?
        245584 ANTI
             0 DIPSOTROP?
             0 ANTI-DIPSOTROP?
               (ANTI(W)DIPSOTROP?)
            13 ANTIDIPSOTROP?
L4           8 L3 AND (ALDH(W)2 OR ALCOHOL? OR ANTI-DIPSOTROP? OR
ANTIDIPSOTROP
               ?)
```

=> d l4 abs ibib kwic hitstr 1-8

L4 ANSWER 1 OF 8 CAPLUS COPYRIGHT 2001 ACS

AB Recent studies showed that daidzin suppresses ethanol intake in ethanol-preferring lab. animals. In vitro, it potently and selectively inhibits the mitochondrial aldehyde dehydrogenase (**ALDH-2**). Further, it inhibits the conversion of monoamines such as serotonin (5-HT) and dopamine (DA) into their resp. acid metabolites, 5-hydroxyindole-3-acetic acid (5-HIAA) and 3,4-dihydroxyphenylacetic acid (DOPAC) in isolated hamster or rat liver mitochondria. Studies on the suppression of ethanol intake and inhibition of 5-HIAA (or DOPAC) formation by six structural analogs of daidzin suggested a potential link between these two activities. This, together with the finding that daidzin does not affect the rates of mitochondria-catalyzed oxidative deamination of these monoamines, raised the possibility that the ethanol intake-suppressive (**antidipsotropic**) action of daidzin is not mediated by the monoamines but rather by their reactive biogenic aldehyde intermediates such as 5-hydroxyindole-3-acetaldehyde (5-HIAL) and/or 3,4-dihydroxyphenylacetaldehyde (DOPAL) which accumulate in the presence of daidzin. To further evaluate this possibility, we synthesized more structural analogs of daidzin and tested and compared their **antidipsotropic** activities in Syrian golden hamsters with their effects on monoamine metab. in isolated hamster liver mitochondria using 5-HT as the substrate. Effects of daidzin and its structural analogs on the activities of monoamine oxidase (MAO) and **ALDH-2**, the key enzymes involved in 5-HT metab. in the mitochondria, were also examd. Results from these studies reveal a pos. correlation between the **antidipsotropic** activities of these analogs and their abilities to increase 5-HIAL accumulation during 5-HT metab. in isolated hamster liver mitochondria. Daidzin analogs that potently inhibit **ALDH-2** but have no or little effect on MAO are most **antidipsotropic**, whereas those that also potently inhibit MAO exhibit little, if any, **antidipsotropic** activity. These results, although inconclusive, are consistent with the hypothesis that daidzin may act via the mitochondrial MAO/ALDH pathway and that a biogenic aldehyde such as 5-HIAL may be important in mediating its **antidipsotropic** action.

ACCESSION NUMBER: 2000:703406 CAPLUS
DOCUMENT NUMBER: 134:13081
TITLE: The Mitochondrial Monoamine Oxidase-Aldehyde Dehydrogenase Pathway: A Potential Site of Action of Daidzin
AUTHOR(S): Rooke, Nadege; Li, Dian-Jun; Li, Junqing; Keung, Wing Ming
CORPORATE SOURCE: Center for Biochemical and Biophysical Sciences and Medicine, Harvard Medical School, Boston, MA, 02115, USA
SOURCE: J. Med. Chem. (2000), 43(22), 4169-4179
CODEN: JMCMAR; ISSN: 0022-2623
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB . . . that daidzin suppresses ethanol intake in ethanol-preferring lab. animals. In vitro, it potently and selectively inhibits the mitochondrial aldehyde dehydrogenase (**ALDH-2**). Further, it inhibits the conversion of monoamines such as serotonin (5-HT) and dopamine (DA) into their resp. acid metabolites, 5-hydroxyindole-3-acetic. . . daidzin does not affect the rates of mitochondria-catalyzed oxidative deamination of these monoamines, raised the possibility that the ethanol intake-suppressive (**antidipsotropic**) action of daidzin is not mediated by the monoamines but rather by their reactive biogenic aldehyde intermediates such as 5-hydroxyindole-3-acetaldehyde. . . presence of daidzin. To further evaluate this possibility, we synthesized more structural analogs of daidzin and tested and compared their **antidipsotropic** activities in Syrian golden hamsters with their effects on monoamine metab. in isolated hamster liver mitochondria using 5-HT as the substrate. Effects of daidzin and its structural analogs on the activities of monoamine oxidase (MAO) and **ALDH-2**, the key enzymes involved in 5-HT metab. in the mitochondria, were also examd. Results from these studies reveal a pos. correlation between the **antidipsotropic** activities of these analogs and their abilities to increase 5-HIAL accumulation during 5-HT metab. in isolated hamster liver mitochondria. Daidzin analogs that potently inhibit **ALDH-2** but have no or little effect on MAO are most **antidipsotropic**, whereas those that also potently inhibit MAO exhibit little, if any, **antidipsotropic** activity. These results, although inconclusive, are consistent with the hypothesis that daidzin may act via the mitochondrial MAO/ALDH pathway and that a biogenic aldehyde such as 5-HIAL may be important in mediating its **antidipsotropic** action.

IT 486-66-8P, DAidzein **309252-39-9P**
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(mitochondrial MAO-aldehyde dehydrogenase pathway: daidzin derivs. action site)

IT 552-66-9DP, Daidzin, analogs 552-66-9P **146698-96-6P**
146698-97-7P 146698-98-8P 146698-99-9P
188881-56-3P 188881-57-4P 250252-71-2P
250252-72-3P 250252-74-5P 309252-38-8P
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(mitochondrial MAO-aldehyde dehydrogenase pathway: daidzin derivs. action site)

IT **309252-39-9P**
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(mitochondrial MAO-aldehyde dehydrogenase pathway: daidzin derivs. action site)
RN 309252-39-9 CAPLUS
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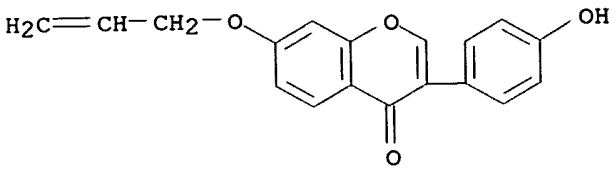

IT **146698-96-6P 146698-97-7P 146698-98-8P 146698-99-9P 188881-56-3P 188881-57-4P 250252-71-2P 250252-72-3P 250252-74-5P 309252-38-8P**
RL: BAC (Biological activity or effector, except adverse); BPR (Biological process); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); PROC (Process); USES (Uses)
(mitochondrial MAO-aldehyde dehydrogenase pathway: daidzin derivs. action site)
RN 146698-96-6 CAPLUS
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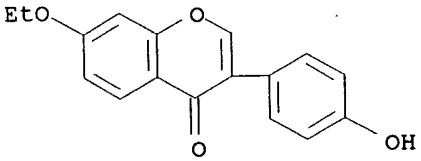
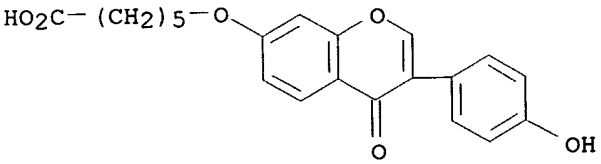
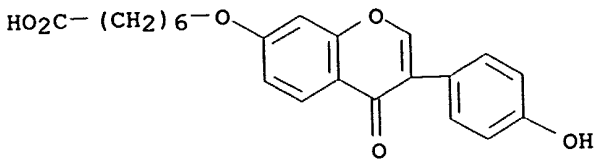


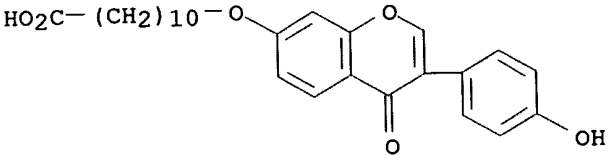
RN 146698-97-7 CAPLUS
CN Hexanoic acid, 6-[[3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl]oxy]- (9CI) (CA INDEX NAME)



RN 146698-98-8 CAPLUS
CN Heptanoic acid, 7-[[3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl]oxy]- (9CI) (CA INDEX NAME)



RN 146698-99-9 CAPLUS
CN Undecanoic acid,
11-[[3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl]oxy]-
(9CI) (CA INDEX NAME)



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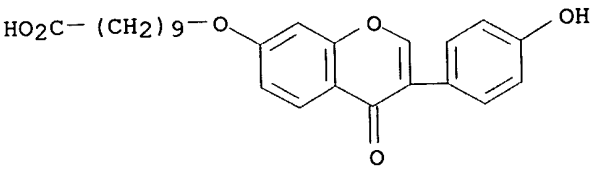
CN Decanoic acid, 10-[[3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl]oxy]-
(9CI) (CA INDEX NAME)



RN 188881-57-4 CAPLUS
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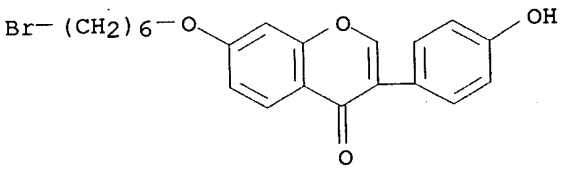
(CA INDEX NAME)



RN 250252-71-2 CAPLUS
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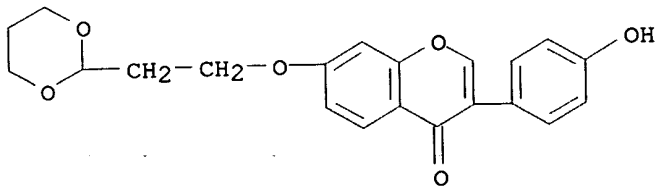
(9CI) (CA INDEX NAME)



RN 250252-72-3 CAPLUS
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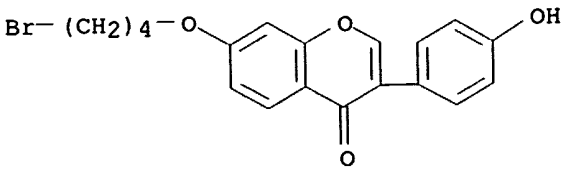
INDEX NAME)



RN 250252-74-5 CAPLUS
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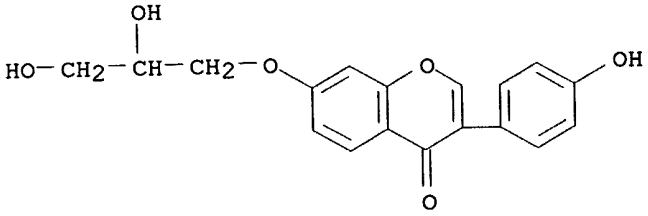
(CA INDEX NAME)



RN 309252-38-8 CAPLUS
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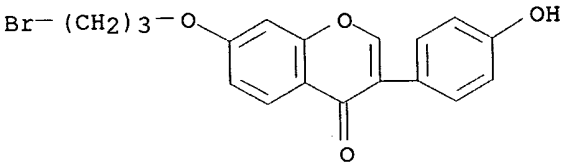

REFERENCE COUNT: 25
REFERENCE(S):
(1) Alivisatos, S; Chemical Modulation of Brain Function 1973, P41 CAPLUS
(2) Ambroziak, W; J Biol Chem 1991, V266, P13011 CAPLUS
(4) Benedict, D; Synthesis 1979, P428 CAPLUS
(5) Deitrich, R; Annu Rev Pharmacol 1980, V20, P55 CAPLUS
(7) Feldstein, A; The Biology of Alcoholism 1971, P127 CAPLUS
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L4 ANSWER 2 OF 8 CAPLUS COPYRIGHT 2001 ACS
AB A method for the treatment of alc. abuse using daidzin and compds. analogous to daidzin is disclosed. Also disclosed is a method for screening compds. having **antidipsotropic** activity.
ACCESSION NUMBER: 1999:736472 CAPLUS
DOCUMENT NUMBER: 131:333371
TITLE: Methods and assays useful in the treatment of **alcohol** dependence or **alcohol** abuse
INVENTOR(S): Vallee, Bert L.; Keung, Wing-Ming
PATENT ASSIGNEE(S): The Endowment for Research In Human Biology, Inc., USA

SOURCE: PCT Int. Appl., 31 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9958124	A1	19991118	WO 1999-US10339	19990512
W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
AU 9938991	A1	19991129	AU 1999-38991	19990512
US 6121010	A	20000919	US 1999-310614	19990512
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PRIORITY APPLN. INFO.: US 1998-85148 P 19980512
WO 1999-US10339 W 19990512

TI Methods and assays useful in the treatment of **alcohol** dependence or **alcohol** abuse

AB . . . alc. abuse using daidzin and compds. analogous to daidzin is disclosed. Also disclosed is a method for screening compds. having **antidipsotropic** activity.

IT **Alcoholism**
(methods and assays useful in treatment of alc. dependence or alc. abuse)

IT 9031-72-5, **Alcohol** dehydrogenase
RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)
(methods and assays useful in treatment of alc. dependence or alc. abuse)

IT **188881-57-4P**
RL: BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(methods and assays useful in treatment of alc. dependence or alc. abuse)

IT **188881-58-5P 188881-59-6P 188881-61-0P**
RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(methods and assays useful in treatment of alc. dependence or alc. abuse)

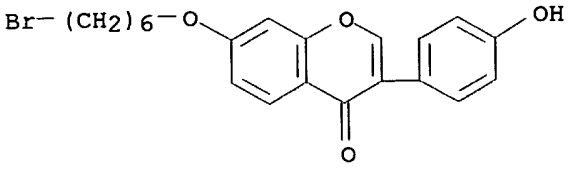
IT 480-40-0, Chrysin 486-66-8, Daidzein 3681-99-0, Puerarin 38183-03-8,
7,8-Dihydroxyflavone **146698-96-6 146698-97-7**
146698-98-8 146698-99-9 188881-56-3
188881-60-9 188881-62-1 188881-63-2
188881-64-3 250252-71-2 250252-72-3
250252-73-4 250252-74-5
RL: BAC (Biological activity or effector, except adverse); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(methods and assays useful in treatment of alc. dependence or alc. abuse)

IT **250252-70-1P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)

(methods and assays useful in treatment of alc. dependence or alc. abuse)

IT **188881-57-4P**
RL: BAC (Biological activity or effector, except adverse); RCT (Reactant); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(methods and assays useful in treatment of alc. dependence or alc. abuse)

RN 188881-57-4 CAPLUS
CN 4H-1-Benzopyran-4-one, 7-[(6-bromohexyl)oxy]-3-(4-hydroxyphenyl)- (9CI) (CA INDEX NAME)



IT **188881-58-5P 188881-59-6P 188881-61-0P**
RL: BAC (Biological activity or effector, except adverse); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)
(methods and assays useful in treatment of alc. dependence or alc. abuse)

RN 188881-58-5 CAPLUS
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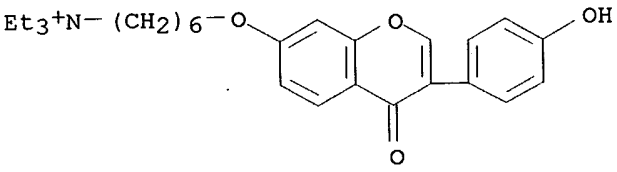
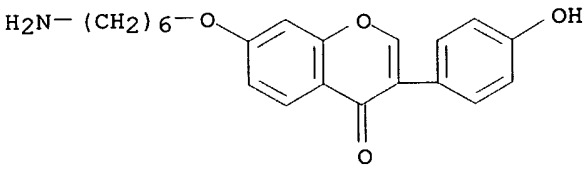
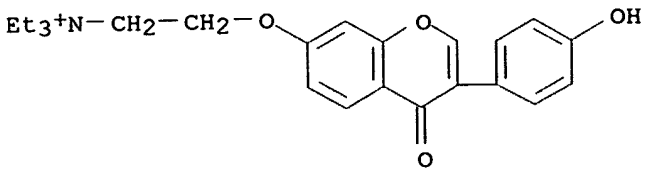


RN 188881-59-6 CAPLUS
CN 4H-1-Benzopyran-4-one, 7-[(6-aminohexyl)oxy]-3-(4-hydroxyphenyl)- (9CI) (CA INDEX NAME)



RN 188881-61-0 CAPLUS
CN Ethanaminium, N,N,N-triethyl-2-[[3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl]oxy]- (9CI) (CA INDEX NAME)



IT **146698-96-6 146698-97-7 146698-98-8**
146698-99-9 188881-56-3 188881-60-9
188881-62-1 188881-63-2 188881-64-3
250252-71-2 250252-72-3 250252-73-4
250252-74-5
RL: BAC (Biological activity or effector, except adverse); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(methods and assays useful in treatment of alc. dependence or alc. abuse)

RN 146698-96-6 CAPLUS
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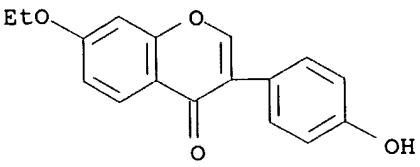

RN 146698-97-7 CAPLUS
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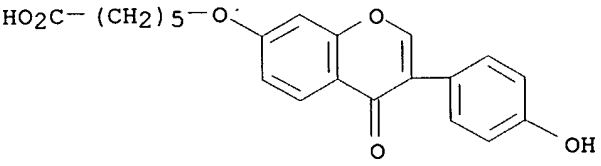
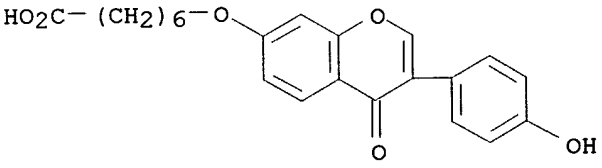


RN 146698-98-8 CAPLUS
CN Heptanoic acid, 7-[[3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl]oxy]- (9CI) (CA INDEX NAME)



RN 146698-99-9 CAPLUS
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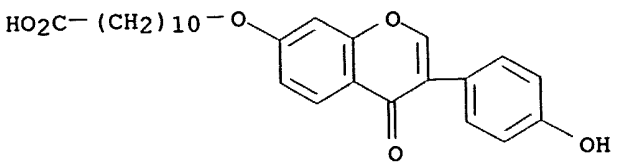
11-[[3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl]oxy]- (9CI) (CA INDEX NAME)



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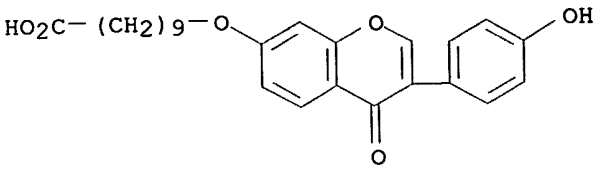

RN 188881-60-9 CAPLUS
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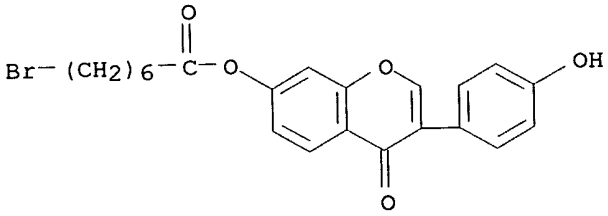
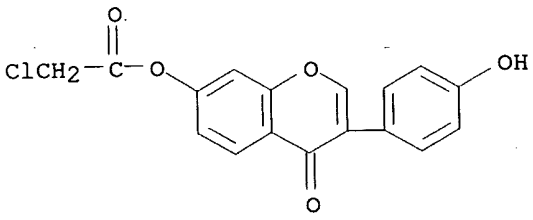
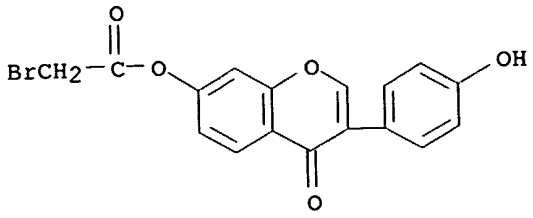
ester (9CI) (CA INDEX NAME)



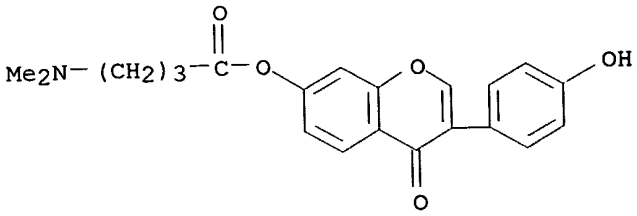
RN 188881-62-1 CAPLUS
CN Acetic acid, chloro-, 3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl
ester
(9CI) (CA INDEX NAME)



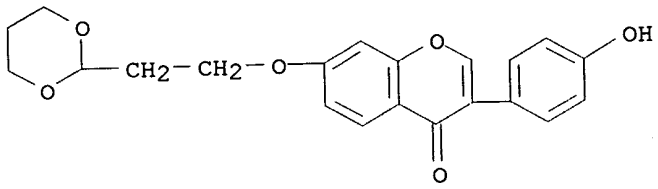
RN 188881-63-2 CAPLUS
CN Acetic acid, bromo-, 3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl ester
(9CI) (CA INDEX NAME)



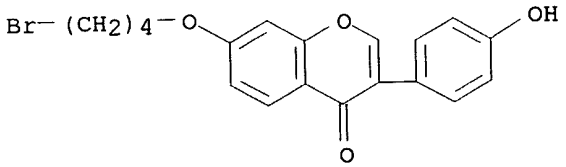
RN 188881-64-3 CAPLUS
CN Butanoic acid, 4-(dimethylamino)-, 3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl ester (9CI) (CA INDEX NAME)



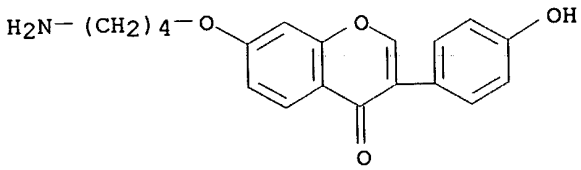
RN 250252-71-2 CAPLUS
CN 4H-1-Benzopyran-4-one, 7-[2-(1,3-dioxan-2-yl)ethoxy]-3-(4-hydroxyphenyl)- (9CI) (CA INDEX NAME)



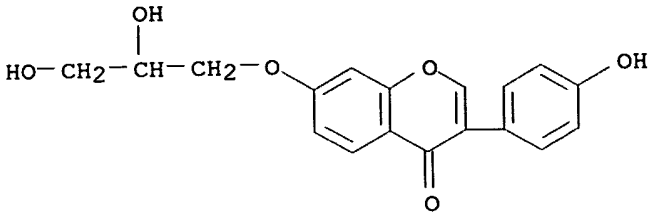
RN 250252-72-3 CAPLUS
CN 4H-1-Benzopyran-4-one, 7-(4-bromobutoxy)-3-(4-hydroxyphenyl)- (9CI) (CA INDEX NAME)



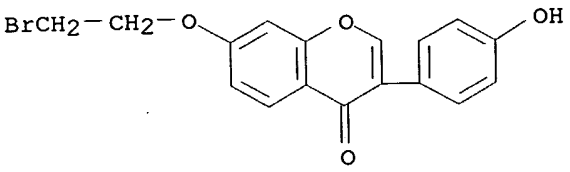
RN 250252-73-4 CAPLUS
CN 4H-1-Benzopyran-4-one, 7-(4-aminobutoxy)-3-(4-hydroxyphenyl)- (9CI) (CA INDEX NAME)



RN 250252-74-5 CAPLUS
CN 4H-1-Benzopyran-4-one, 7-(2,3-dihydroxypropoxy)-3-(4-hydroxyphenyl)- (9CI)
(CA INDEX NAME)



IT **250252-70-1P**
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation)
(methods and assays useful in treatment of alc. dependence or alc. abuse)
RN 250252-70-1 CAPLUS
CN 4H-1-Benzopyran-4-one, 7-(2-bromoethoxy)-3-(4-hydroxyphenyl)- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 2
REFERENCE(S):
(1) Endowment Res Inhuman Biology; WO 9300896 A 1993 CAPLUS
(2) Vallee, B; US 5624910 A 1997 CAPLUS

L4 ANSWER 3 OF 8 CAPLUS COPYRIGHT 2001 ACS
AB Daidzin, a major active principle of an ancient Chinese herbal treatment (Radix puerariae) for alc. abuse, selectively suppresses ethanol intake in all rodent models tested. It also inhibits mitochondrial aldehyde dehydrogenase (**ALDH-2**). Studies on ethanol intake suppression and in and **ALDH-2** inhibition by structural analogs of daidzin established a link between these two activities and suggested that daidzin may suppress ethanol intake by inhibiting **ALDH-2**. **ALDH-2** is a principal enzyme involved in serotonin (5-HT) and dopamine (DA) metab. Thus, daidzin may act by inhibiting 5-HT and DA metab. To evaluate this possibility, we have studied the effect of daidzin and its analogs on 5-HT and DA metab. in isolated hamster and rat liver mitochondria. Daidzin potently inhibits the formation of 5-hydroxyindole-3-acetic acid (5-HIAA) and 3,4-dihydroxyphenylacetic acid (DOPAC) from their resp. amines in isolated mitochondria. Inhibition is concn.-dependent and is accompanied by a concomitant accumulation of 5-hydroxyindole-3-acetaldehyde and 3,4-dihydroxyphenylacetaldehyde. Daidzin analogs that suppress hamster ethanol intake also inhibit 5-HIAA and DOPAC formation. Comparing their effects on mitochondria-catalyzed 5-HIAA or DOPAC formation and hamster ethanol intake reveals a pos. correlation-the stronger the inhibition on 5-HIAA or DOPAC formation, the greater the ethanol intake suppression. Daidzin and its active analogs, at concns. that significantly inhibit 5-HIAA formation, have little or no effect on mitochondria-catalyzed 5-HT

depletion. It appears that the **antidipsotropic** action of daidzin is not mediated by 5-HT (or DA) but rather by its reactive intermediates 5-hydroxyindole-3-acetaldehyde and, presumably, 3,4-dihydroxyphenylacetaldehyde as well, which accumulates in the presence of daidzin.

ACCESSION NUMBER: 1998:173127 CAPLUS
DOCUMENT NUMBER: 128:291383
TITLE: Daidzin and its **antidipsotropic** analogs inhibit serotonin and dopamine metabolism in isolated mitochondria
AUTHOR(S): Keung, Wing Ming; Vallee, Bert L.
CORPORATE SOURCE: Center for Biochemical and Biophysical Sciences and Medicine, Harvard Medical School, Boston, MA, 02115, USA
SOURCE: Proc. Natl. Acad. Sci. U. S. A. (1998), 95(5), 2198-2203
CODEN: PNASA6; ISSN: 0027-8424
PUBLISHER: National Academy of Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English

not. pr. or art

TI Daidzin and its **antidipsotropic** analogs inhibit serotonin and dopamine metabolism in isolated mitochondria

AB . . . (Radix puerariae) for alc. abuse, selectively suppresses ethanol intake in all rodent models tested. It also inhibits mitochondrial aldehyde dehydrogenase (**ALDH-2**). Studies on ethanol intake suppression and in and **ALDH-2** inhibition by structural analogs of daidzin established a link between these two activities and suggested that daidzin may suppress ethanol intake by inhibiting **ALDH-2**. **ALDH-2** is a principal enzyme involved in serotonin (5-HT) and dopamine (DA) metab. Thus, daidzin may act by inhibiting 5-HT and. . . at concns. that significantly inhibit 5-HIAA formation, have little or no effect on mitochondria-catalyzed 5-HT depletion. It appears that the **antidipsotropic** action of daidzin is not mediated by 5-HT (or DA) but rather by its reactive intermediates 5-hydroxyindole-3-acetaldehyde and, presumably, 3,4-dihydroxyphenylacetaldehyde. . .

ST daidzin analog **antidipsotropic** serotonin dopamine metab

IT **Alcoholism**
Liver
Mitochondria
Neurotransmission
(daidzin and its **antidipsotropic** analogs inhibit serotonin and dopamine metab. in isolated mitochondria)

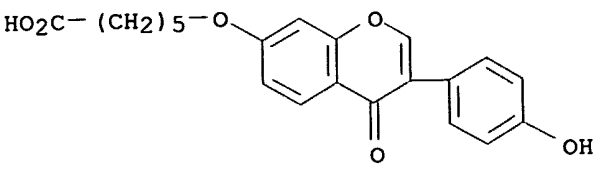
IT 486-66-8, Daidzein 552-66-9, Daidzin 3681-99-0, Puerarin **146698-97-7 146698-98-8 188881-56-3 206051-01-6**
RL: BAC (Biological activity or effector, except adverse); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(daidzin and its **antidipsotropic** analogs inhibit serotonin and dopamine metab. in isolated mitochondria)

IT 50-67-9, Serotonin, biological studies 51-61-6, Dopamine, biological studies 54-16-0, 5-Hydroxyindole-3-acetic acid, biological studies 102-32-9, DOPAC
RL: BPR (Biological process); BIOL (Biological study); PROC (Process)
(daidzin and its **antidipsotropic** analogs inhibit serotonin and dopamine metab. in isolated mitochondria)

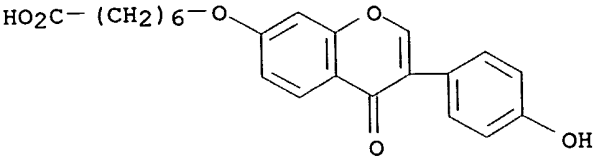
IT **146698-97-7 146698-98-8 188881-56-3 206051-01-6**
RL: BAC (Biological activity or effector, except adverse); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(daidzin and its **antidipsotropic** analogs inhibit serotonin and dopamine metab. in isolated mitochondria)

RN 146698-97-7 CAPLUS

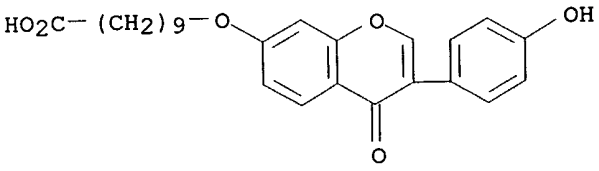
CN Hexanoic acid, 6-[[3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl]oxy]-
(9CI) (CA INDEX NAME)



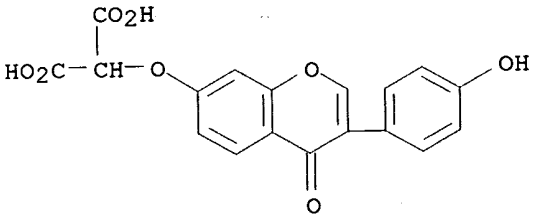
RN 146698-98-8 CAPLUS
CN Heptanoic acid, 7-[[3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl]oxy]-
(9CI) (CA INDEX NAME)



RN 188881-56-3 CAPLUS
CN Decanoic acid, 10-[[3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl]oxy]-
(9CI) (CA INDEX NAME)



RN 206051-01-6 CAPLUS
CN Propanedioic acid, [[3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl]oxy]-
(9CI) (CA INDEX NAME)



L4 ANSWER 4 OF 8 CAPLUS COPYRIGHT 2001 ACS
AB Method for inhibiting aldehyde dehydrogenase activity using daidzin and/or
daidzin analog and/or daidzin or daidzin analog in combination with a factor or factors which increase the bioavailability of the daidzin or daidzin analog, as ALDH-I inhibitory compds. or compns. Such inhibitory compds. or compns. are useful as pharmaceutical compns. in methods for the
treatment of alc. dependence (i.e., **alcoholism**) or alc. abuse, for alc. sensitization, for extinguishing an alc.-drinking response, for

suppressing an urge for alc., for inducing alc. intolerance, for preventing **alcoholism** in an individual with or without a susceptibility or predisposition to **alcoholism** or alc. abuse, and for limiting alc. consumption in an individual whether or not genetically predisposed.

ACCESSION NUMBER: 1997:311251 CAPLUS
DOCUMENT NUMBER: 126:326770
TITLE: Method for the inhibition of ALDH-I useful in the treatment of **alcohol** dependence or **alcohol** abuse
INVENTOR(S): Vallee, Bert L.; Keung, Wing-Ming
PATENT ASSIGNEE(S): Human Biology, Inc., USA
SOURCE: U.S., log36 pp. Cont.-in-part of U.S. 5,204,369.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5624910	A	19970429	US 1994-170272	19940524
US 5204369	A	19930420	US 1991-723404	19910701
WO 9300896	A1	19930121	WO 1992-US5598	19920630
W: AU, BR, CA, FI, HU, JP, KR, NO, RO, RU, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE				
US 5886028	A	19990323	US 1997-840360	19970429
US 6255497	B1	20010703	US 1998-190360	19981112

PRIORITY APPLN. INFO.:

US 1991-723404	A2	19910701
WO 1992-US5598	W	19920630
US 1994-170272	A1	19940524
US 1997-840360	A3	19970429

OTHER SOURCE(S): MARPAT 126:326770

TI Method for the inhibition of ALDH-I useful in the treatment of **alcohol** dependence or **alcohol** abuse

AB . . . compns. Such inhibitory compds. or compns. are useful as pharmaceutical compns. in methods for the treatment of alc. dependence (i.e., **alcoholism**) or alc. abuse, for alc. sensitization, for extinguishing an alc.-drinking response, for suppressing an urge for alc., for inducing alc. intolerance, for preventing **alcoholism** in an individual with or without a susceptibility or predisposition to **alcoholism** or alc. abuse, and for limiting alc. consumption in an individual whether or not genetically predisposed.

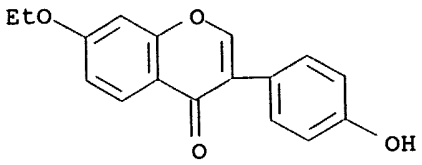
ST aldehyde dehydrogenase inhibitor **alcoholism** daidzin analog; ethanol dependence daidzin analog aldehyde dehydrogenase

IT **Alcoholism**
(aldehyde dehydrogenase I inhibition in treatment of alc. dependence or alc. abuse)

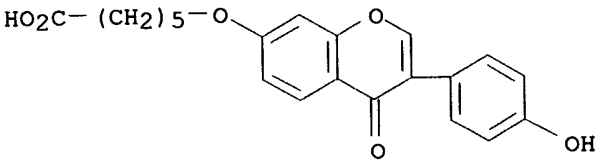
IT **146698-96-6P 146698-97-7P 146698-98-8P 146698-99-9P**
RL: BPR (Biological process); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)
(aldehyde dehydrogenase I inhibition in treatment of alc. dependence or alc. abuse)

IT **146698-96-6P 146698-97-7P 146698-98-8P 146698-99-9P**
RL: BPR (Biological process); PRP (Properties); SPN (Synthetic preparation); BIOL (Biological study); PREP (Preparation); PROC (Process)
(aldehyde dehydrogenase I inhibition in treatment of alc. dependence or alc. abuse)

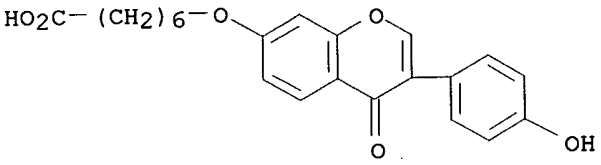
RN 146698-96-6 CAPLUS
CN 4H-1-Benzopyran-4-one, 7-ethoxy-3-(4-hydroxyphenyl)- (9CI) (CA INDEX NAME)



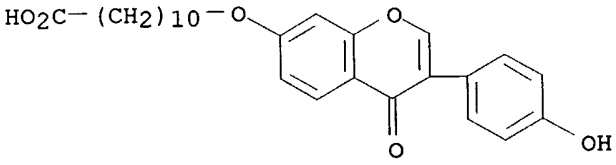
RN 146698-97-7 CAPLUS
CN Hexanoic acid, 6-[[3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl]oxy]- (9CI) (CA INDEX NAME)



RN 146698-98-8 CAPLUS
CN Heptanoic acid, 7-[[3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl]oxy]- (9CI) (CA INDEX NAME)



RN 146698-99-9 CAPLUS
CN Undecanoic acid,
11-[[3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl]oxy]- (9CI) (CA INDEX NAME)



L4 ANSWER 5 OF 8 CAPLUS COPYRIGHT 2001 ACS
AB Daidzin is the major active principle in exts. of radix puerariae, a traditional Chinese medication that suppresses the ethanol intake of Syrian golden hamsters. It is the first isoflavone recognized to have this effect. Daidzin is also a potent and selective inhibitor of human mitochondrial aldehyde dehydrogenase (**ALDH-2**). To establish a link between these two activities, we have tested a series of synthetic structural analogs of daidzin. The results demonstrate a direct correlation between **ALDH-2** inhibition and ethanol

intake suppression and raise the possibility that daidzin may, in fact, suppress ethanol intake of golden hamsters by inhibiting **ALDH-2**. Hamster liver contains not only mitochondrial **ALDH-2** but also high concns. of a cytosolic form, ALDH-1, which is a very efficient catalyst of acetaldehyde oxidn. Further, the cytosolic isoenzyme is completely resistant to daidzin inhibition. This unusual property of the hamster ALDH-1 isoenzyme accounts for the fact we previously obsd. that daidzin can suppress ethanol intake of this species without blocking acetaldehyde metab. Thus, the mechanism by which daidzin suppresses ethanol intake in golden hamsters clearly differs from that proposed for the classic ALDH inhibitor disulfram. We postulate that a physiol. pathway catalyzed by **ALDH-2**, so far undefined, controls ethanol intake of golden hamsters and mediates the **antidipsotropic** effect of daidzin.

ACCESSION NUMBER: 1997:172678 CAPLUS
DOCUMENT NUMBER: 126:260370
TITLE: Daidzin inhibits mitochondrial aldehyde dehydrogenase and suppresses ethanol intake of Syrian golden hamsters
AUTHOR(S): Keung, Wing Ming; Klyosov, Anatole K.; Vallee, Bert L.
CORPORATE SOURCE: Cent. Biochemical Biophysical Sci. Med., Harvard Med. Sch., Boston, MA, 02115, USA
SOURCE: Proc. Natl. Acad. Sci. U. S. A. (1997), 94(5), 1675-1679
CODEN: PNASA6; ISSN: 0027-8424
PUBLISHER: National Academy of Sciences
DOCUMENT TYPE: Journal
LANGUAGE: English

AB . . . first isoflavone recognized to have this effect. Daidzin is also a potent and selective inhibitor of human mitochondrial aldehyde dehydrogenase (**ALDH-2**). To establish a link between these two activities, we have tested a series of synthetic structural analogs of daidzin. The results demonstrate a direct correlation between **ALDH-2** inhibition and ethanol intake suppression and raise the possibility that daidzin may, in fact, suppress ethanol intake of golden hamsters by inhibiting **ALDH-2**. Hamster liver contains not only mitochondrial **ALDH-2** but also high concns. of a cytosolic form, ALDH-1, which is a very efficient catalyst of acetaldehyde oxidn. Further, the. . . hamsters clearly differs from that proposed for the classic ALDH inhibitor disulfram. We postulate that a physiol. pathway catalyzed by **ALDH-2**, so far undefined, controls ethanol intake of golden hamsters and mediates the **antidipsotropic** effect of daidzin.

ST **antidipsotropic** daidzin mitochondria aldehyde dehydrogenase ethanol

IT Structure-activity relationship
(**antidipsotropic**; daidzin derivs. inhibition of mitochondrial aldehyde dehydrogenase and ethanol intake)

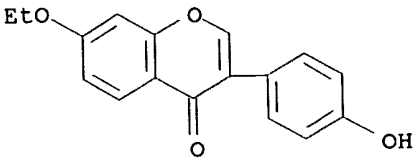
IT **Alcoholism**
(daidzin derivs. inhibition of mitochondrial aldehyde dehydrogenase and ethanol intake)

IT 480-40-0, Chrysin 486-66-8, Daidzein 552-66-9, Daidzin 3681-99-0, Puerarin 38183-03-8, 7,8-Dihydroxyflavone **146698-96-6** **146698-97-7** **146698-98-8** **146698-99-9** **188881-56-3** **188881-57-4** **188881-58-5** **188881-59-6** **188881-60-9** **188881-61-0** **188881-62-1** **188881-63-2** **188881-64-3**
RL: BAC (Biological activity or effector, except adverse); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(daidzin derivs. inhibition of mitochondrial aldehyde dehydrogenase and

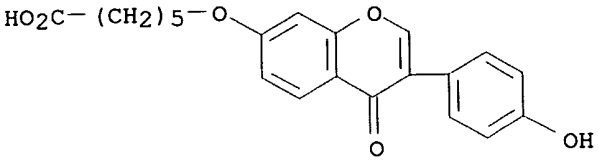
ethanol intake)

IT **146698-96-6 146698-97-7 146698-98-8**
146698-99-9 188881-56-3 188881-57-4
188881-58-5 188881-59-6 188881-60-9
188881-61-0 188881-62-1 188881-63-2
188881-64-3
RL: BAC (Biological activity or effector, except adverse); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(daidzin derivs. inhibition of mitochondrial aldehyde dehydrogenase and ethanol intake)

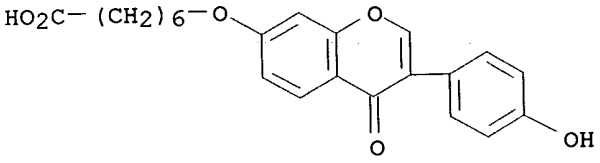
RN 146698-96-6 CAPLUS
CN 4H-1-Benzopyran-4-one, 7-ethoxy-3-(4-hydroxyphenyl)- (9CI) (CA INDEX NAME)



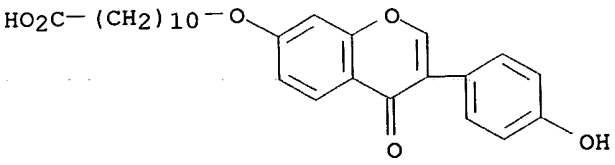
RN 146698-97-7 CAPLUS
CN Hexanoic acid, 6-[[3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl]oxy]- (9CI) (CA INDEX NAME)



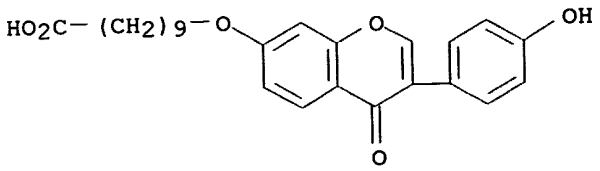
RN 146698-98-8 CAPLUS
CN Heptanoic acid, 7-[[3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl]oxy]- (9CI) (CA INDEX NAME)



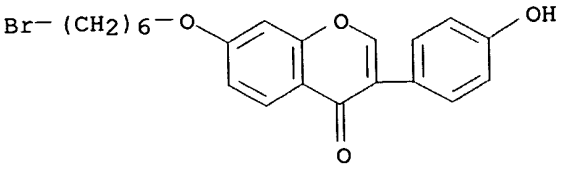
RN 146698-99-9 CAPLUS
CN Undecanoic acid, 11-[[3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl]oxy]- (9CI) (CA INDEX NAME)



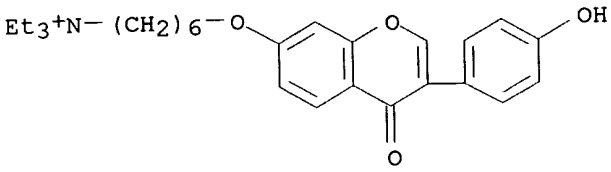
RN 188881-56-3 CAPLUS
CN Decanoic acid, 10-[[3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl]oxy]- (9CI) (CA INDEX NAME)



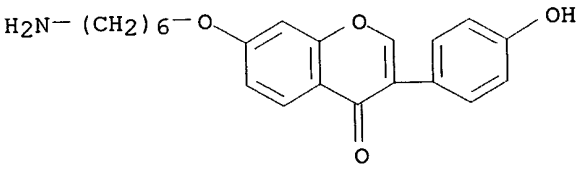
RN 188881-57-4 CAPLUS
CN 4H-1-Benzopyran-4-one, 7-[(6-bromohexyl)oxy]-3-(4-hydroxyphenyl)- (9CI) (CA INDEX NAME)



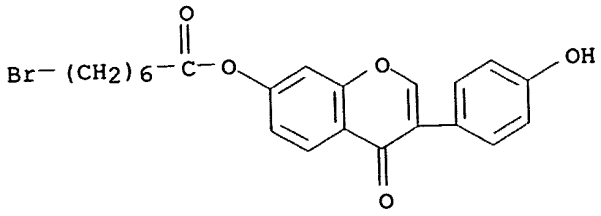
RN 188881-58-5 CAPLUS
CN 1-Hexanaminium, N,N,N-triethyl-6-[[3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl]oxy]- (9CI) (CA INDEX NAME)



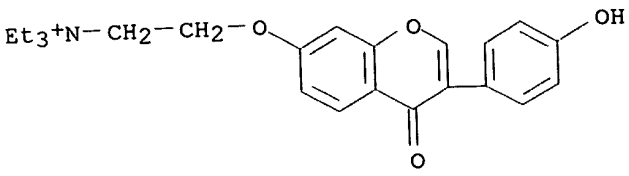
RN 188881-59-6 CAPLUS
CN 4H-1-Benzopyran-4-one, 7-[(6-aminohexyl)oxy]-3-(4-hydroxyphenyl)- (9CI) (CA INDEX NAME)



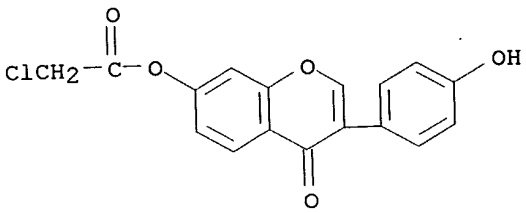
RN 188881-60-9 CAPLUS
CN Heptanoic acid, 7-bromo-, 3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl ester (9CI) (CA INDEX NAME)



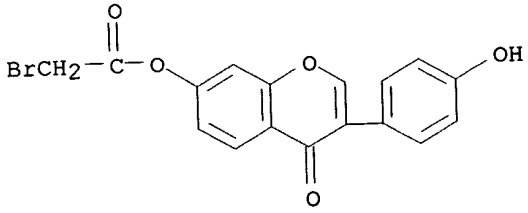
RN 188881-61-0 CAPLUS
CN Ethanaminium, N,N,N-triethyl-2-[[3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl]oxy]- (9CI) (CA INDEX NAME)



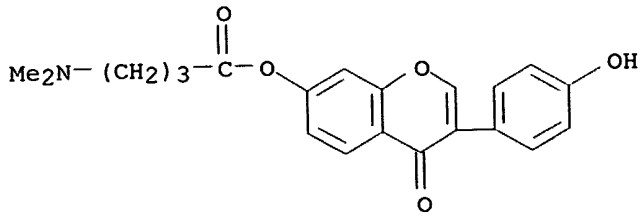
RN 188881-62-1 CAPLUS
CN Acetic acid, chloro-, 3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl ester (9CI) (CA INDEX NAME)



RN 188881-63-2 CAPLUS
CN Acetic acid, bromo-, 3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl ester (9CI) (CA INDEX NAME)



RN 188881-64-3 CAPLUS
CN Butanoic acid, 4-(dimethylamino)-, 3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl ester (9CI) (CA INDEX NAME)



L4 ANSWER 6 OF 8 CAPLUS COPYRIGHT 2001 ACS

AB Two potent, reversible inhibitors of human alc. dehydrogenase (ADH) isoenzymes were isolated from Radix puerariae (RP, commonly known as kudzu root) and identified as the isoflavones daidzein and genistein. The 4'-methoxy derivs. of daidzein (trivial name, formononetin) and genistein (biochanin A), minor constituents of RP, were also shown to be ADH inhibitors. All of these isoflavones inhibit the human .gamma.2.gamma.2-ADH isoenzyme competitively with respect to ethanol and uncompetitively with respect to NAD+. A survey of more than 40 structurally related compds. revealed one more isoflavone (prunetin) and four flavones (7-hydroxyflavone, apigenin, galangin, and kaempferol) that inhibit ADH. The isoflavone inhibitors, however, are far more potent than the flavone inhibitors. Among the isoflavones studied, genistein is the most potent with K1 = 0.1 .mu.M toward .gamma.2.gamma.2-ADH. Human ADH isoenzymes differ in their sensitivity to these inhibitors in the order .gamma.2.gamma.2-, .gamma.1.gamma.1- > .alpha..alpha.-, .pi..pi.-> XXADH. These inhibitors do not affect the .beta.1.beta.1- and .beta.2.beta.2-ADH isoenzymes at concns. as high as 20 .mu.M. Rat and rabbit class I ADHs are also inhibited by these isoflavone inhibitors. The 7-O-glucosyl derivs. of daidzein, genistein, formononetin, and biochanin A do not inhibit ADH, but are potent aldehyde dehydrogenase inhibitors.

ACCESSION NUMBER: 1994:648509 CAPLUS
DOCUMENT NUMBER: 121:248509
TITLE: Biochemical studies of a new class of **alcohol** dehydrogenase inhibitors from Radix puerariae
AUTHOR(S): Keung, Wing-Ming
CORPORATE SOURCE: Center Biochemical and Biophysical Sciences and Medicine, Harvard Medical School and Brigham and Women's Hospital, Boston, MA, 02115, USA
SOURCE: Alcohol.: Clin. Exp. Res. (1993), 17(6), 1254-60
CODEN: ACRSDM; ISSN: 0145-6008
DOCUMENT TYPE: Journal
LANGUAGE: English

TI Biochemical studies of a new class of **alcohol** dehydrogenase inhibitors from Radix puerariae

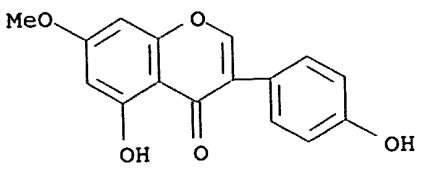
IT 446-72-0, Genistein 485-72-3, Formononetin 491-80-5, Biochanin A 520-18-3, Kaempferol 520-36-5, Apigenin 548-83-4, Galangin **552-59-0**, Prunetin 612-96-4, 2-Phenylquinoline 6665-86-7, 7-Hydroxyflavone
RL: BAC (Biological activity or effector, except adverse); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(alc. dehydrogenase inhibitors from Radix puerariae)

IT 9031-72-5, **Alcohol** dehydrogenase
RL: BSU (Biological study, unclassified); BIOL (Biological study)
(isoenzymes; alc. dehydrogenase inhibitors from Radix puerariae)

IT **552-59-0**, Prunetin
RL: BAC (Biological activity or effector, except adverse); THU (Therapeutic use); BIOL (Biological study); USES (Uses)
(alc. dehydrogenase inhibitors from Radix puerariae)

RN 552-59-0 CAPLUS
CN 4H-1-Benzopyran-4-one, 5-hydroxy-3-(4-hydroxyphenyl)-7-methoxy- (9CI) (CA

INDEX NAME)



L4 ANSWER 7 OF 8 CAPLUS COPYRIGHT 2001 ACS

AB ALDH-I is inhibited by daidzin (I) or an analog thereof, optionally with factor(s) increasing the bioavailability of the I or I analog. Such inhibitory compds. or compns. are useful as pharmaceutical compns in methods for the treatment of alc. dependence (i.e. **alcoholism**) or alc. abuse, for alc. sensitization, for extinguishing an alc.-drinking response, for suppressing an urge for alc., for inducing alc. intolerance, for preventing **alcoholism** in an individual with or without a susceptibility or predisposition to alc. or alc. abuse, and for limiting alc. consumption in an individual, whether or not the individual is genetically predisposed. I was isolated from the crude drug Radix Puerariae (prepd. as the dried root of Pueraria lobata). Kinetic consts. for the inhibition by I of ALDH isoenzymes I and II were 40 and 20,000 nM, resp. Prepn. and inhibitory activity of ether derivs., e.g. daidzein 7-(.omega.-carboxydecyl) ether, is also presented. I, at doses of 5, 10, and 30 mg/day suppressed alc. intake by hamsters by 20, 50, and 80%, resp. I in a crude Radix Puerariae methanolic ext. was 5-10 times more potent than pure I.

ACCESSION NUMBER: 1993:185706 CAPLUS
DOCUMENT NUMBER: 118:185706
TITLE: Method using daidzin or daidzin analog for the inhibition of aldehyde dehydrogenase I (ALDH-I), and use in the treatment of **alcohol** dependence or **alcohol** abuse
INVENTOR(S): Vallee, Bert L.; Keung, Wing Ming
PATENT ASSIGNEE(S): Endowment for Research in Human Biology, Inc., USA
SOURCE: PCT Int. Appl., 98 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 9300896	A1	19930121	WO 1992-US5598	19920630
W: AU, BR, CA, FI, HU, JP, KR, NO, RO, RU, US				
RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LU, MC, NL, SE				
US 5204369	A	19930420	US 1991-723404	19910701
AU 9223085	A1	19930211	AU 1992-23085	19920630
EP 592583	A1	19940420	EP 1992-915216	19920630
EP 592583	B1	20010131		
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AT 198983	E	20010215	AT 1992-915216	19920630
NO 9304911	A	19940228	NO 1993-4911	19931230
US 5624910	A	19970429	US 1994-170272	19940524
US 6255497	B1	20010703	US 1998-190360	19981112

PRIORITY APPLN. INFO.: US 1991-723404 A2 19910701
WO 1992-US5598 A 19920630

US 1994-170272 A1 19940524
US 1997-840360 A3 19970429

OTHER SOURCE(S): MARPAT 118:185706

TI Method using daidzin or daidzin analog for the inhibition of aldehyde dehydrogenase I (ALDH-I), and use in the treatment of **alcohol** dependence or **alcohol** abuse

AB . . . analog. Such inhibitory compds. or compns. are useful as pharmaceutical compns in methods for the treatment of alc. dependence (i.e. **alcoholism**) or alc. abuse, for alc. sensitization, for extinguishing an alc.-drinking response, for suppressing an urge for alc., for inducing alc. intolerance, for preventing **alcoholism** in an individual with or without a susceptibility or predisposition to alc. or alc. abuse, and for limiting alc. consumption. . . .

ST daidzin aldehyde dehydrogenase inhibitor; **alcoholism** treatment daidzin

IT Drug dependence
(**alcoholism**, treatment of, daidzin for, aldehyde dehydrogenase I inhibition in relation to)

IT Kudzu
(P. lobata, daidzin from Radix Puerariae of, aldehyde dehydrogenase I inhibition by, **alcoholism** treatment in relation to)

IT Kudzu
(P. lobata, roots, daidzin from, aldehyde dehydrogenase I inhibition by, **alcoholism** treatment in relation to)

IT 486-66-8D, analogs 552-66-9, Daidzin
RL: BIOL (Biological study)
(aldehyde dehydrogenase I inhibition with, **alcoholism** treatment in relation to)

IT 480-44-4, Acacetin 486-62-4, Ononin 525-82-6, Flavone 529-59-9, Genistin **552-59-0**, Prunetin 2555-30-8, 7-Hydroxy-4-phenylcoumarin 13057-72-2 36136-92-2 88407-29-8 146699-00-5 146699-01-6
RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)
(aldehyde dehydrogenase inhibitory activity of)

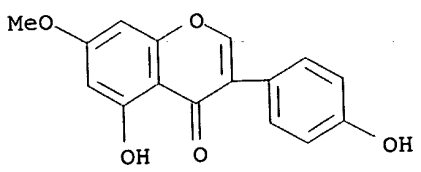
IT 9028-86-8, Aldehyde dehydrogenase
RL: BIOL (Biological study)
(isoenzyme I, inhibition of, by daidzin or daidzin analog, **alcoholism** treatment in relation to)

IT **146698-96-6P 146698-97-7P 146698-98-8P 146698-99-9P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and aldehyde dehydrogenase I inhibitory activity of)

IT **147158-74-5P 147158-75-6P 147158-76-7P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

IT **552-59-0**, Prunetin
RL: BAC (Biological activity or effector, except adverse); BIOL (Biological study)
(aldehyde dehydrogenase inhibitory activity of)

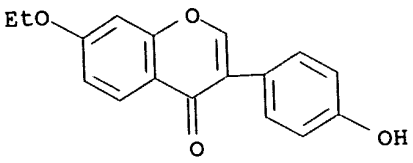
RN 552-59-0 CAPLUS
CN 4H-1-Benzopyran-4-one, 5-hydroxy-3-(4-hydroxyphenyl)-7-methoxy- (9CI) (CA INDEX NAME)



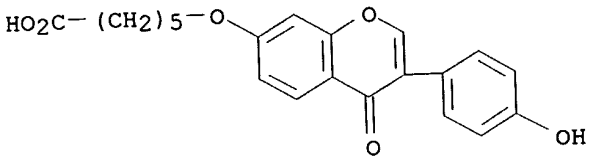
Delacroix

IT **146698-96-6P 146698-97-7P 146698-98-8P**
146698-99-9P
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. and aldehyde dehydrogenase I inhibitory activity of)

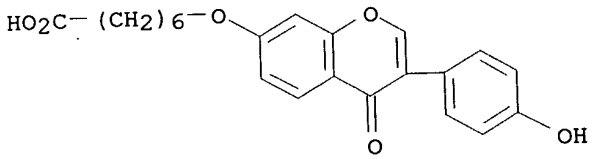
RN 146698-96-6 CAPLUS
CN 4H-1-Benzopyran-4-one, 7-ethoxy-3-(4-hydroxyphenyl)- (9CI) (CA INDEX NAME)



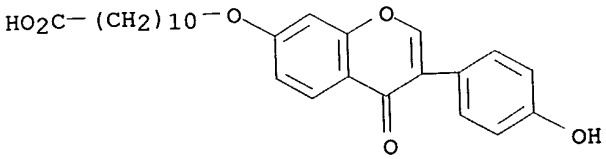
RN 146698-97-7 CAPLUS
CN Hexanoic acid, 6-[[3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl]oxy]- (9CI) (CA INDEX NAME)



RN 146698-98-8 CAPLUS
CN Heptanoic acid, 7-[[3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl]oxy]- (9CI) (CA INDEX NAME)

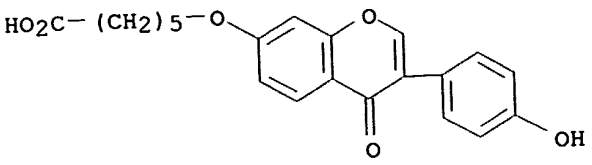


RN 146698-99-9 CAPLUS
CN Undecanoic acid,
11-[[3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl]oxy]- (9CI) (CA INDEX NAME)



IT **147158-74-5P 147158-75-6P 147158-76-7P**
RL: SPN (Synthetic preparation); PREP (Preparation)
(prepn. of)

RN 147158-74-5 CAPLUS
CN Hexanoic acid, 6-[[3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl]oxy]-, monopotassium salt (9CI) (CA INDEX NAME)



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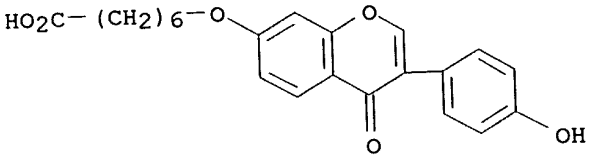
RN 147158-75-6 CAPLUS
CN Heptanoic acid, 7-[[3-(4-hydroxyphenyl)-4-oxo-4H-1-benzopyran-7-yl]oxy]-, monopotassium salt (9CI) (CA INDEX NAME)



● K

RN 147158-76-7 CAPLUS
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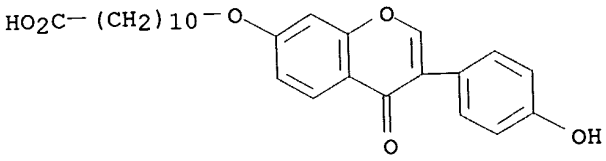


● K

L4 ANSWER 8 OF 8 CAPLUS COPYRIGHT 2001 ACS
AB Human mitochondrial aldehyde dehydrogenase (ALDH-I) is potently, reversibly, and selectively inhibited by an isoflavone isolated from Radix puerariae and identified as daidzin, the 7-glucoside of 4',7-dihydroxyisoflavone. Kinetic anal. with formaldehyde as substrate reveals that daidzin inhibits ALDH-I competitively with respect to formaldehyde with a Ki of 40 nM, and uncompetitively with respect to the coenzyme NAD+. The human cytosolic aldehyde dehydrogenase isoenzyme (ALDH-II) is nearly 3 orders of magnitude less sensitive to daidzin inhibition. Daidzin does not inhibit human class I, II, or III alc. dehydrogenases, nor does it have any significant effect on biol. systems that are known to be affected by other isoflavones. Among more than 40 structurally related compds. surveyed, 12 inhibit ALDH-I, but only prunetin and 5-hydroxydaidzin (genistin) combine high selectivity and

potency, although they are 7- to 15-fold less potent than daidzin. Structure-function relationships have established a basis for the design and synthesis of addnl. ALDH inhibitors that could both be yet more potent and specific. Perhaps the ALDH-I inhibitors could be useful in the treatment of **alcoholism**.

ACCESSION NUMBER: 1993:185661 CAPLUS
DOCUMENT NUMBER: 118:185661
TITLE: Daidzin: A potent, selective inhibitor of human mitochondrial aldehyde dehydrogenase
AUTHOR(S): Keung, Wing Ming; Vallee, Bert L.
CORPORATE SOURCE: Cent. Biochem. Biophys. Sci. Med., Harvard Med. Sch., Boston, MA, 02115, USA
SOURCE: Proc. Natl. Acad. Sci. U. S. A. (1993), 90(4), 1247-51
CODEN: PNASA6; ISSN: 0027-8424
DOCUMENT TYPE: Journal
LANGUAGE: English

AB . . . that could both be yet more potent and specific. Perhaps the ALDH-I inhibitors could be useful in the treatment of **alcoholism** .

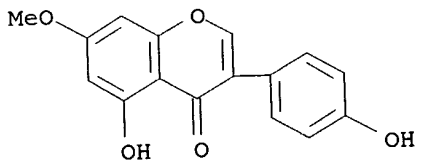
ST aldehyde dehydrogenase inhibition isoflavone daidzin structure; **alcoholism** treatment aldehyde dehydrogenase inhibitor daidzin

IT 480-44-4, Acacetin 486-62-4, Ononin 525-82-6, Flavone 529-59-9, Genistin **552-59-0**, Prunetin 2555-30-8, 7-Hydroxy-4-phenylcoumarin 18651-11-1 36136-92-2 88407-29-8 146699-00-5 146699-01-6
RL: BIOL (Biological study)
(aldehyde dehydrogenase of humans inhibition by, structure in relation to)

IT 552-66-9, Daidzin
RL: BIOL (Biological study)
(of Radix puerariae and aldehyde dehydrogenase of humans inhibition by, **alcoholism** treatment and structure in relation to)

IT **552-59-0**, Prunetin
RL: BIOL (Biological study)
(aldehyde dehydrogenase of humans inhibition by, structure in relation to)

RN 552-59-0 CAPLUS
CN 4H-1-Benzopyran-4-one, 5-hydroxy-3-(4-hydroxyphenyl)-7-methoxy- (9CI) (CA INDEX NAME)



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E3            1 --> DAIDZIN/CN
E4            1     DAIDZIN F11/CN
E5            1     DAIDZIN F8/CN
E6            1     DAIDZIN, PENTAACETATE/CN
E7            1     DAIDZIN, PENTABENZOATE/CN
E8            1     DAIDZOSIDE/CN
E9            1     DAIELEC PE 291/CN
E10           1     DAIF S-1/CN
E11           1     DAIF S-2/CN
E12           1     DAIF-S 1/CN

=> s e3
L1            1 DAIDZIN/CN

=> d l1

L1   ANSWER 1 OF 1  REGISTRY  COPYRIGHT 2002 ACS
RN   552-66-9  REGISTRY
CN   4H-1-Benzopyran-4-one, 7-(.beta.-D-glucopyranosyloxy)-3-(4-hydroxyphenyl)-
     (9CI)  (CA INDEX NAME)
OTHER CA INDEX NAMES:
CN   Daidzin (6CI, 7CI, 8CI)
OTHER NAMES:
CN   7,4'-Dihydroxyisoflavone 7-glucoside
CN   Daidzein 7-glucoside
CN   Daidzein 7-O-glucoside
CN   Daidzoside
CN   NPI 031D
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Absolute stereochemistry.
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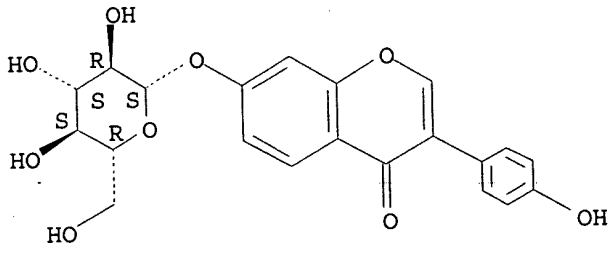


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**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**
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436 REFERENCES IN FILE CA (1967 TO DATE)
10 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA
437 REFERENCES IN FILE CAPLUS (1967 TO DATE)
5 REFERENCES IN FILE CAOLD (PRIOR TO 1967)

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